

Patient Centered Telemedicine

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Abstract

Instant Medical History®¹ is an interrogation expert system that uses the patient to generate the initial portion of the electronic medical record. Prior to a decision about what type of medical intervention is required, the patient uses an interactive voice response telephone system to respond to branching questions based on the answer to the previous question. The responses are translated into medical terminology and presented to medical personnel who can quickly determine the level of encounter. In the future, patient interview software will triage patients and generate the subjective portion of electronic medical record visit notes.

Telephones have been an integral part of medical care for a long time. Patients are comfortable receiving health information by telephone as they call their physician's office for medical information regularly. Automation in health care will replace some direct patient care both in the office and over the telephone.

One of the well-documented areas of automated telephone use is the provision of patient information over the telephone. Typically the caller has a list of potential messages to select. In some systems, a caller can receive a master list by fax-on-demand systems. More interactive uses of telephones in health care such as nurse operated telephone lines offering advice and guidance have become widespread. Also, many Health Maintenance Organizations provide services to reduce emergency room demand by encouraging self care based on telephone triage protocols, usually overseen by nurses. While modern medicine would be unimaginable without the telephone, few projects have employed the telephone innovatively. There are several telemedicine applications under development by Primetime Medical Software, Inc., including: Information retrieval, health surveillance, and primary care delivery.

When the patient calls on the telephone, a receptionist inquires about the nature of the patient's problem. If the patient has an urgent emergency, the patient is referred appropriately. If the patient has symptoms that require evaluation and medical history taking, the receptionist switches the patient to a voice response system that incorporates Instant Medical History®. After the history has been entered by the patient, then the receptionist with

the aid of triage software makes a determination about the specific need of that particular patient.

In today's fee-for service medical care system, patients call the physician's office to receive treatment. Quantity of service determines the fee. There is financial incentive to schedule an appointment. When physicians are paid for population based health care, as in managed care settings, then the paradigm shifts to screening, triage, and wellness. In the future, an interactive telephone will take a medical history directly from the patient, screen the patient for appropriate interventions, and triage the patient for appropriate care. By having more information prior to the office visit, appropriate testing could be performed, proper referral arranged, inappropriate care avoided, and unnecessary visits deferred. The financial incentive will be for quality of care. Health surveillance for defined populations will be the primary care physician's new medical role. Population based medical practice offers a great potential for enhancement of preventive outcomes. There are potential serious issues of invasion of privacy, but only rarely (like with tuberculosis) should anyone be forced into the health care system. Diabetic care and reminders for preventative efforts such as mammography and immunization may be an important target for this type of system. Both the telephone and information technology will play an important role in establishing two way communication between health care providers and patients.

Instant Medical History®, telephonic computerized patient interview software, will screen all types of patients in under seven minutes with minimal personnel direction. The software will evaluate both organic symptoms and psychosomatic complaints simultaneously. It will pursue not only subjective symptoms in a branching fashion following up organic complaints, but also recognize patterns of answering that would suggest a psychosomatic complaint.

In summary, patient-driven interview software will be an integral part of any electronic medical record system of the future. By generating the subjective visit note, patient interview software enhances productivity. The financial savings of patient interview software could balance capital costs of the electronic medical record. Patient self reporting offers tremendous benefit to the physician by making the job of searching for the diagnosis easier, increasing the accuracy of information in medical records, and providing a basis for outcomes evaluation.

¹Instant Medical History is a registered trademark of Primetime Medical Software, Inc.; 111 East Medical Lane; West Columbia, South Carolina 29169; Telephone 803-796-7980; FAX 803-739-2795.